

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>P105168.W002</b>	<b>FOR FURTHER ACTION</b> <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. <b>PCT/GB2008/051042</b>	International filing date (day/month/year) <b>07/11/2008</b>	(Earliest) Priority Date (day/month/year) <b>09/11/2007</b>
Applicant  <b>PURSUIT DYNAMICS PLC</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed  
☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6b/s(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant  
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant  
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 5

- ☒ as suggested by the applicant  
☐ as selected by this Authority, because the applicant failed to suggest a figure  
☐ as selected by this Authority, because this figure better characterizes the invention

b. ☐ none of the figures is to be published with the abstract

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/GB2008/051042

## A. CLASSIFICATION OF SUBJECT MATTER

INV. A61L2/22 B05B7/06 B05B1/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
A61L B05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2005/082546 A (PURSUIT DYNAMICS PLC [GB]; FENTON MARCUS BRIAN MAYHALL [GB]; HEATHCOTE) 9 September 2005 (2005-09-09) figures 16-19,21	1-36
X	WO 94/08724 A (CASEY ALAN PATRICK [AU]) 28 April 1994 (1994-04-28) abstract; figures page 12, lines 14-23 page 15, lines 13-21	1-36
A	WO 01/76764 A (CHROBAK JULIUS [SK]) 18 October 2001 (2001-10-18) cited in the application page 1 - page 2; claims; figure 2 ----- -/-	1-36



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \* & \* document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

20 February 2009

05/03/2009

Name and mailing address of the ISA/  
European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040,  
Fax: (+31-70) 340-3016

Authorized officer

Nissen, Vagn

International application No  
PCT/GB2008/051042

**C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT**

2

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2008/051042

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2005082546	A	09-09-2005	AU 2005216699 A1	09-09-2005
			CA 2556673 A1	09-09-2005
			EP 1718413 A1	08-11-2006
			US 2007210186 A1	13-09-2007
WO 9408724	A	28-04-1994	AT 190866 T	15-04-2000
			BG 99557 A	29-03-1996
			BR 9307239 A	25-05-1999
			CA 2147008 A1	28-04-1994
			CZ 9500966 A3	13-03-1996
			DE 69328185 D1	27-04-2000
			DE 69328185 T2	21-12-2000
			EP 0664734 A1	02-08-1995
			ES 2143512 T3	16-05-2000
			FI 951721 A	01-06-1995
			HU 72516 A2	28-05-1996
			JP 3264930 B2	11-03-2002
			JP 8502203 T	12-03-1996
			NO 951425 A	11-04-1995
			NZ 256646 A	25-06-1996
			PL 308351 A1	24-07-1995
			RU 2128087 C1	27-03-1999
			US 5735468 A	07-04-1998
WO 0176764	A	18-10-2001	CZ 20023443 A3	18-06-2003
			CZ 14882 U1	12-01-2005
			SK 5272000 A3	03-12-2001
WO 03072952	A	04-09-2003	AU 2003207347 A1	09-09-2003
			CA 2477568 A1	04-09-2003
			JP 2006504019 T	02-02-2006
US 6405944	B1	18-06-2002	AU 760330 B2	15-05-2003
			AU 9078998 A	16-03-1999
			CA 2301744 A1	04-03-1999
			DE 69819017 D1	20-11-2003
			DE 69819017 T2	05-08-2004
			EP 1007220 A1	14-06-2000
			ES 2212831 T3	01-08-2004
			FR 2767492 A1	26-02-1999
			WO 9910104 A1	04-03-1999
			PT 1007220 T	31-03-2004

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/GB2008/051042

International filing date (day/month/year)  
07.11.2008

Priority date (day/month/year)  
09.11.2007

International Patent Classification (IPC) or both national classification and IPC  
INV. A61L2/22 B05B7/06 B05B1/06

Applicant  
PURSUIT DYNAMICS PLC

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA:



European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Date of completion of  
this opinion

see form  
PCT/ISA/210

Authorized Officer

Nissen, Vagn

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2008/051042

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of:
  - ☒ the international application in the language in which it was filed
  - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ on paper
    - ☐ in electronic form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in electronic form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2008/051042

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	<u>1, 15, 28, 29, 34-36</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-36</u>
Industrial applicability (IA)	Yes: Claims	<u>1-36</u>
	No: Claims	

2. Citations and explanations

see separate sheet

**Re Item V.**

Reference is made to the following documents:

- D1 : WO 2005/082546 A (PURSUIT DYNAMICS PLC [GB]; FENTON MARCUS BRIAN MAYHALL [GB]; HEATHCOTE) 9 September 2005 (2005-09-09)
- D2 : WO 94/08724 A (CASEY ALAN PATRICK [AU]) 28 April 1994 (1994-04-28)
- D3: WO 01/76764 A (CHROBAK JULIUS [SK]) 18 October 2001 (2001-10-18)  
cited in the application
- D4: WO 03/072952 A (PURSUIT DYNAMICS PLC [GB]; TODMAN MICHAEL TORR [GB]; FENTON MARCUS BRI) 4 September 2003 (2003-09-04)
- D5: US-B1-6 405 944 (BENALIKHOUDJA KARIM [FR]) 18 June 2002 (2002-06-18)

1. Coaxial nozzles for providing a mist of a liquid by entraining the liquid from one channel into a gas moving at high velocity in another channel is well-known [vide D1-D5].
  - 1.1 D1 discloses several designs for such nozzles, some of which comprising a throat portion in the center fluid channel which has a smaller cross sectional area than both the inlet and outlet of said channel. The area ratio between the throat portion and the outlet is not explicitly mentioned, but could be assumed to be within the range of 2:3 to 1:4. The inclination between the center channel and the surrounding channel(s) appears to be in the range of 15-25 degrees [figures 16-19, 21]. In any event it is evident to the skilled person that various characteristics of the droplet formation may be obtained by varying the angle [See corresponding text to the figures on pages 42-45]. The device according to D1 can be used to generate a mist if a disinfectant [page 63, 1st §]. It is also foreseen that the outer channel may have a throat portion [see the figures].
  - 1.2 Accordingly, at least the subject-matter of independent claims 1, 15, 28, 29 and 34-36 lacks novelty (Art. 33(2) PCT).
2. A similar disclosure is found in D2 [page 12, lines 14-23; page 15 lines 13-21 and figures] (Art. 33(2) PCT). Admittedly, D2 does not explicitly mention the use of the



device for sterilising purposes but rather for use in a combustion engine. Nevertheless, the device can be considered suitable for such purpose and alternative uses in general have been implied [page 1, lines 8-10].

3. Dependent claims 2-14, 16-27 and 30-33 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.
- 3.1 In said claims only slight constructional change in the subject matter of the independent claims are defined and which come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen. Consequently, the subject-matter of said dependent claims at least lacks an inventive step (Art. 33(3) PCT).

Possible steps after receipt of the international search report (ISR) and written opinion of the International Searching Authority (WO-ISA)

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General information	For all international applications filed on or after 01/01/2004 the competent ISA will establish an ISR. It is accompanied by the WO-ISA. Unlike the former written opinion of the IPEA (Rule 66.2 PCT), the WO-ISA is not meant to be responded to, but to be taken into consideration for further procedural steps. This document explains about the possibilities.
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Amending claims under Art. 19 PCT	Within 2 months after the date of mailing of the ISR and the WO-ISA the applicant may file amended claims under Art. 19 PCT directly with the International Bureau of WIPO. The PCT reform of 2004 did not change this procedure. For further information please see Rule 46 PCT as well as form PCT/ISA/220 and the corresponding Notes to form PCT/ISA/220.
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Filing a demand for international preliminary examination	In principle, the WO-ISA will be considered as the written opinion of the IPEA. This should, in many cases, make it unnecessary to file a demand for international preliminary examination. If the applicant nevertheless wishes to file a demand this must be done before expiry of 3 months after the date of mailing of the ISR/ WO-ISA or 22 months after priority date, whichever expires later (Rule 54bis PCT). Amendments under Art. 34 PCT can be filed with the IPEA as before, normally at the same time as filing the demand (Rule 66.1 (b) PCT).
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If a demand for international preliminary examination is filed and no comments/amendments have been received the WO-ISA will be transformed by the IPEA into an IPRP (International Preliminary Report on Patentability) which would merely reflect the content of the WO-ISA. The demand can still be withdrawn (Art. 37 PCT).

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Filing informal comments	After receipt of the ISR/WO-ISA the applicant may file informal comments on the WO-ISA directly with the International Bureau of WIPO. These will be communicated to the designated Offices together with the IPRP (International Preliminary Report on Patentability) at 30 months from the priority date. Please also refer to the next box.
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End of the international phase	At the end of the international phase the International Bureau of WIPO will transform the WO-ISA or, if a demand was filed, the written opinion of the IPEA into the IPRP, which will then be transmitted together with possible informal comments to the designated Offices. The IPRP replaces the former IPER (international preliminary examination report).
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Relevant PCT Rules and more information	Rule 43 PCT, Rule 43bis PCT, Rule 44 PCT, Rule 44bis PCT, PCT Newsletter 12/2003, OJ 11/2003, OJ 12/2003
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